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10/611,679	07/02/2003	Jouni Kauhanen	60091.00215	5344

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SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER	
DAVENPORT, MON CHERI S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/611,679	KAUHANEN, JOUNI	
	Examiner	Art Unit	
	Mon Cheri S. Davenport	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-21 and 27-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *6-21 and 27-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/22/2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 6, 14, 27, and 35** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claims 6, 14, 27, 35, it is unclear what is meant by the statement "determining time characteristics of the idle period relative to the time reference by means of power measurement". It is not clear how the power measurement is related to the time characteristic and the time reference. For examination on the merits claim will be interpreted as best understood.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims **6-21 and 27-39** rejected under 35 U.S.C. 102(b) as being anticipated by Kuwahara et al. (US Patent Application Publication 2002/0009974).

Regarding **Claim 6** Kuwahara et al. discloses a method comprising: receiving, in a base station, a time reference signal providing time reference in the telecommunication system ***(see figure 3, paragraph [0020]);***

generating an idle period(***"delay" or "advance" of [fraction (1/16)] in every 80 millisecond frame)*** in the transmission of a base station***(see paragraph [0035], propagation time); (see paragraph [0028], preferably eliminates deviations in the time of signal transmission from the base station antenna 10 by repetition of a very small adjustment, such a "delay" or "advance" of [fraction (1/16)] in every 80 millisecond frame)***

determining, in the base station, time characteristics of the idle period relative to the time reference by means of a power measurement ***(see paragraph [0029], TDOA, time difference of arrival is calculated using triangulation, which relies on signal strength (power))***; and

providing at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using time characteristics of the idle period ***(see paragraph[0037], control apparatus regularly delivers error information on the transmission timing, may be transmitted by wired or wireless mean to the center).***

Regarding **Claim 7** Kuwahara et al. discloses everything as applied above (see claim 6).

positioning a mobile station by using time characteristics of the at least portion of data ***(see paragraph[0029], position measurement will occur if the relative reception timing difference of the signal transmitted from each base station TDOA is accurately calculated)***.

Regarding **Claim 8** Kuwahara et al. discloses everything as applied above (see claim 6).

emitting the idle period***("delay" or "advance" of [fraction (1/16)] in every 80 millisecond frame)*** from an antenna unit of the base station ***(see paragraph [0025], by subtracting propagation time, the reference clock then adjust the time stamp from the base station antenna accordingly); see also paragraph [0028], preferably eliminates deviations in the time of signal transmission from the base station antenna 10 by repetition of a very small adjustment, such a "delay" or "advance" of [fraction (1/16)] in every 80 millisecond frame)***

and

determining time characteristics of the idle period such that an uncertainty of a time interval between determining time characteristics of the idle period and emitting the idle period from the antenna unit of the base station is below a predefined value ***(see paragraph [0028], a very small adjustment such as a "delay" or "advance" of 1/16 un every 80 millisecond frame).***

Regarding **Claim 9** Kuwahara et al. discloses everything as applied above (see claim 6).

emitting the idle period from an antenna unit of the base station ***(see paragraph [0026], wherein the transmission time stamp is herein defined to be included in the "reception time" received according to cellular antenna)***; and

determining time characteristics of the idle period at a moment of emitting the idle period from the antenna unit of the base station (***see paragraph [0026], the reference clock generator allows a measurement of the exact time at which the signal transmitted from the antenna).***

Regarding **Claim 10** Kuwahara et al. discloses everything as applied above (see claim 6).

determining timing of a predefined portion of the idle period relative to the time reference by means of the power measurement***(see paragraph [0029], TDOA, time difference of arrival)***; and

providing the at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using the timing of the predefined portion of the idle period(***see paragraph [0027], Because an accurate reception time for the signal transmitted from the base station antenna is already known at the cellular antenna).***

Regarding **Claim 11** Kuwahara et al. discloses everything as applied above (see claim 6).

further comprising determining time characteristics of an idle period in a frame relative to the time reference***(see paragraph [0028], a very small adjustment such as a "delay" or "advance" of 1/16 un every 80 millisecond frame)***;

providing the frame with the time characteristics proportional to the time reference by using time characteristics of the idle period in the frame ***(see paragraph [0028], the reference clock generator preferably eliminates deviations in the time of signal transmission from the base station antenna).***

Regarding **Claim 12** Kuwahara et al. discloses everything as applied above (see claim 6).

emitting the idle period from an antenna unit of the base station ***(see paragraph [0025], by subtracting propagation time, the reference clock then adjust the time stamp from the base station antenna accordingly)***;

detecting, in a mobile station, the idle period emitted from the antenna of the base station ***(see paragraph [0032], see figure 1, section 4, terminal, to perform location via triangulation must be equipped with transmission timing apparatus in order to generate accurate location of the terminal)***;

determining the time of arrival of the idle period in the mobile station ***(see paragraph [0038], an accurate location can be calculated by the terminal due to the compensation by the terminal for the timing offset values of the base station);*** and

positioning the mobile station by using the time of arrival of the idle period ***(see paragraph [0038], the information accumulate at the center is downloaded to the terminal for location measurement).***

Regarding **Claim 13** Kuwahara et al. discloses everything as applied above (see claim 6)

synchronizing the transmission of the base station by using the time characteristics of the idle period relative to the time reference ***(see paragraph[0030],signal compensation for delay differences among sectors, as revealed by the cellular receiver, must be fed back to the base band unit of each base station)***.

Regarding **Claim 14** Kuwahara et al. discloses a system comprising:

a base station for providing radio transmission and reception for mobile stations*(see figure 3, section 5,6, and 7, base station);*

wherein the base station comprises a time reference signal receiver configured to receive a time reference signal providing time reference in the telecommunication system *(see figure 3, section 20,21, and 22, transmission timing apparatus)* ;

wherein the base station comprises an idle period (cable delay) *(see paragraph [0029], cable delay occur when a signal is inputted from the GPS antenna cable delay may occur within the receiver, or over the connection between the receiver)* configured to generate an idle period in the transmission of the base station *(see figure 3, section 24, apparatus for receiving timing measurement, filter delay (reads on idle period generator));*

wherein the base station comprises a detector operationally connected to the idle period (cable delay)generator and the time reference signal receiver configured to determine time characteristics of the idle period relative to the time reference by means of a power measurement *(see figure 3, section 21, see paragraph [0029], TDOA, time difference of arrival)*; and

a time stamper operationally connected to the detector configured to provide at least a portion of data to be transmitted from the base station with the time characteristics proportional to the time reference by using the time characteristics of the idle period*(see figure 3, section 21, apparatus for transmission timing measurement).*

Regarding **Claim 15** Kuwahara et al. discloses everything as applied above (see claim 14).

a positioner (center) operationally connected to the base station configured to position(location measurement) a mobile station by using time characteristics of the at least a portion of data ***(see figure 3, section 28, center, see paragraph [0038], information accumulated at the center is downloaded to the terminal for location measurement).***

Regarding **Claims 16 and 40** Kuwahara et al. discloses everything as applied above (see claims 14 and 35)

wherein the base station comprises an antenna operationally connected to the idle period generator configured to emit the idle period***(see figure 3, section 16, cellular antenna, see paragraph [0034], signal transmitted from a base station antenna via a cellular antenna);*** and

wherein the detector is configured to determine time characteristics of the idle period such that the uncertainty of the time interval between determining time characteristics of the idle period and emitting the idle period from the antenna of the base station is below a predetermined value ***(see paragraph [0028], a very small adjustment such as a "delay" or "advance" of 1/16 un every 80 millisecond frame).***

Regarding **Claims 17 and 41** Kuwahara et al. discloses everything as applied above (see claims 14 and 35)

wherein the base station comprises an antenna operationally connected to the idle period generator configured to emit the idle period***(see figure 3, section 16, cellular antenna, see paragraph [0034], signal transmitted from a base station antenna via a cellular antenna);*** and

the detector is configured to determine time characteristics of the idle period at a moment of emitting the idle period***(see paragraph [0026], the reference clock generator allows a measurement of the exact time at which the signal transmitted from the antenna).***

Regarding **Claims 18 and 42** Kuwahara et al. discloses everything as applied above (see claims 14 and 35)

wherein the detector is configured to determine timing of a predefined portion of the idle period relative to the time reference by means of the power measurement***(see paragraph [0029], TDOA, time difference of arrival)***; and

wherein the time stamper is configured to provide the at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using the timing of the predefined portion of the idle period***(see paragraph [0038], information accumulated at the center is downloaded to the terminal upon request)***.

Regarding **Claims 19 and 43** Kuwahara et al. discloses everything as applied above (see claims14 and 35)

wherein the detector is configured to determine the time characteristics of an idle period in a frame relative to time reference ***(see paragraph [0028], a very small adjustment such as a "delay" or "advance" of 1/16 un every 80 millisecond frame)***; and

wherein the time stamper is configured to provide the frame with the time characteristics proportional to the time reference by using time characteristics the idle period in the frame***(see paragraph [0028], the reference clock generator preferably eliminates deviations in the time of signal transmission from the base station antenna).***

Regarding **Claim 20** Kuwahara et al. discloses everything as applied above (see claim 14)

wherein the base station comprises an antenna operationally connected to the idle period generator configured to emit the idle period ***(see figure 3, section 21 and 24, apparatus for receiving timing measurement) ;***

the telecommunication system further comprising a mobile station configured to detect the idle period emitted from the antenna of the base station***(see figure 3, section 4, mobile terminal);***

wherein the mobile station is configured to determine the time of arrival of the idle period ***(see paragraph[0038], at the terminal the location is calculated by using the compensated reception timing information obtained by subtracting from the reception timing measured at the terminal the offset);*** and

wherein the positioner is configured to position**(location measurement)** the mobile station by using the time of arrival of the idle period ***(see paragraph[0038], information accumulated at the center is downloaded upon request for location measurement).***

Regarding **Claims 21 and 44** Kuwahara et al. discloses everything as applied above (see claims 14 and 35)

wherein the base station is configured to synchronize transmission of the base station by using time characteristics of the idle period relative to the time reference ***(see paragraph[0039], once the transmission timing offset is measured, the compensation value for the transmission varies, the results are stored at the center to enable location measurement).***

Regarding **Claim 27** Kuwahara et al. discloses a system, comprising:

receiving means for receiving, in a base station, a time reference signal providing time reference in the telecommunication system ***(see figure 3, section 13, GPS antenna)***

generating means for generating an idle period in the transmission of a base station ***(see figure 3, section 24, apparatus for receiving timing measurement, filter delay);***

determining means for determining, in the base station, time characteristics of the idle period relative to the time reference by means of a power measurement ***(see figure 3, section 21, apparatus for transmission timing measurement);*** and

providing means for providing at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using time characteristics of the idle period***(see figure 3, section 28, center, see paragraph,[0038])***.

Regarding **Claim 28** Kuwahara et al. discloses everything as applied above (see claim 27)

positioning means for positioning a mobile station by using time characteristics of the at least portion of data ***(see figure 3, section 28, center, see paragraph[0038]).***

Regarding **Claim 29** Kuwahara et al. discloses everything as applied above (see claim 27)

emitting means for emitting the idle period from an antenna of the base station***(see figure 3, section 16, cellular antenna);*** and

second determining means for determining time characteristics of the idle period such that an uncertainty of a time interval between determining time characteristics of the idle period and emitting the idle period from the antenna of the base station is below a predefined value ***(see figure 3, section 24, apparatus for receiving timing measurement, filter delay).***

Regarding **Claim 30** Kuwahara et al. discloses everything as applied above (see claim 27)

emitting means for emitting the idle period from an antenna of the base station ***(see figure 3, section 16, cellular antenna);*** and

second determining means for determining time characteristics of the idle period at a moment of emitting the idle period from the antenna of the base station ***(see figure3, section 24, apparatus for receiving timing measurement, see paragraph, [0038]).***

Regarding **Claim 31** Kuwahara et al. discloses everything as applied above (see claim 27)

second determining means for determining timing of a predefined portion of the idle period relative to the time reference by means of the power measurement*(see paragraph [0029], TDOA, time difference of arrival)*; and

second providing means for providing the at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using the timing of the predefined portion of the idle period *(see figure 3, section 21, apparatus for transmission timing measurement).*

Regarding **Claim 32** Kuwahara et al. discloses everything as applied above (see claim 27)

second determining means for determining time characteristics of an idle period in a frame relative to the time reference *(see paragraph [0028], a very small adjustment such as a "delay" or "advance" of 1/16 un every 80 millisecond frame)*;

second providing means for providing the frame with the time characteristics proportional to the time reference by using time characteristics of the idle period in the frame *(see paragraph [0028], the reference clock generator preferably eliminates deviations in the time of signal transmission from the base station antenna).*

Regarding **Claim 33** Kuwahara et al. discloses everything as applied above (see claim 27)

Emitting means for emmitting the idle period from an antenna of the base station *(see figure 3, section 16, cellular antenna);*

detecting means for detecting, in a mobile station, the idle period emitted from the antenna of the base station ***(see figure 3, section 4, mobile terminal, section 28, center, paragraph[0038]);***

second determining means for determining the time of arrival of the idle period in the mobile station ***(see figure 3, section 4, mobile terminal, section 28, center, paragraph[0038]);*** and

positioning means for positioning the mobile station by using the time of arrival of the idle period ***(see figure 3, section 28, center, see paragraph [0038]).***

Regarding **Claim 34** Kuwahara et al. discloses everything as applied above (see claim 27)

synchronizing means for synchronizing the transmission of the base station by using the time characteristics of the idle period relative to the time reference***(see paragraph[0039], once the transmission timing offset is measured, the compensation value for the transmission varies, the results are stored at the center to enable location measurement).***

Regarding **Claim 35** Kuwahara et al. discloses an apparatus, comprising:

a time referencing signal receiver configured to receive a time reference signal providing time reference in the telecommunication system***(see figure 1, section 13, GPS antenna, see paragraph [0023])***;

an idle period generator configured to generate an idle period in the transmission of a base station***(see paragraph [0028], preferably eliminates deviations in the time of signal***

transmission from the base station antenna 10 by repetition of a very small adjustment, such a "delay" or "advance" of [fraction (1/16)] in every 80 millisecond frame)

a detector operationally connected to the idle period generator and the time reference signal receiver, the detector configured to determine time characteristic of the idle period relative to the time reference by means of a power measurement ***(see paragraph [0029], position measurement, no error in terminal position measurement will occur if the relative reception timing difference of the signal transmitted from each base station, TDOA, time difference of arrival, is calculated using triangulation, which relies on signal strength (power),);*** and

a time stamper operationally connected to the detector and configured to provide at least a portion of data to be transmitted from the base station with the time characteristics proportional to the time reference by using the time characteristic of the idle period***(see paragraph[0037], control apparatus regularly delivers error information on the transmission timing, may be transmitted by wired or wireless mean to the center, see also paragraph[0036] The error in transmission / timing is then estimated from the difference between the measured transmission timing and the expected transmission timing at the base station).***

Regarding **Claim 36** Kuwahara et al. discloses everything as applied above (see claim 6).

further comprising performing the power measurement of the idle period with a gauge located between the base band unit and the antenna of a base station ***(see paragraph [0029], for a position measurement, no error in terminal position measurement will occur if the relative reception timing difference of the signal transmitted from each base station, i.e. time difference of arrival (TDOA)(is calculated using triangulation , which relies on signal strength (power)), is accurately calculated. Therefore, any additional error due to unforeseen***

cable delays or the like is reduced or eliminated through the use of a transmission timing measurement apparatus 18, see figure 1)

Regarding **Claim 37** Kuwahara et al. discloses everything as applied above (see claim 14).

further comprising a gauge located between the base band unit and the antenna of a base station, wherein the gauge is configured to perform the power measurement on the idle period ***(see paragraph [0029], for a position measurement, no error in terminal position measurement will occur if the relative reception timing difference of the signal transmitted from each base station, i.e. time difference of arrival (TDOA)(is calculated using triangulation , which relies on signal strength (power)), is accurately calculated. Therefore, any additional error due to unforeseen cable delays or the like is reduced or eliminated through the use of a transmission timing measurement apparatus 18, see figure 1).***

Regarding **Claim 38** Kuwahara et al. discloses everything as applied above (see claim 27).

further comprising a gauge located between the base band unit and the antenna unit of a base station, wherein the gauge is configured to perform the power measurement on the idle period ***see paragraph [0029], for a position measurement, no error in terminal position measurement will occur if the relative reception timing difference of the signal transmitted from each base station, i.e. time difference of arrival (TDOA)(is calculated using triangulation , which relies on signal strength (power)), is accurately calculated. Therefore, any additional error due to unforeseen cable delays or the like is reduced or eliminated through the use of a transmission timing measurement apparatus 18, see figure 1)***.

Regarding **Claim 39** Kuwahara et al. discloses everything as applied above (see claim 35).

further comprising a gauge located between the base band unit and the antenna of a base station, wherein the gauge is configured to perform the power measurement on the idle period ***see paragraph [0029], for a position measurement, no error in terminal position measurement will occur if the relative reception timing difference of the signal transmitted from each base station, i.e. time difference of arrival (TDOA)(is calculated using triangulation, which relies on signal strength (power)), is accurately calculated. Therefore, any additional error due to unforeseen cable delays or the like is reduced or eliminated through the use of a transmission timing measurement apparatus 18, see figure 1).***

Response to Arguments

2. Applicant's arguments with respect to claims 6, 14, 27, and 35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mon Cheri S. Davenport whose telephone number is 571-270-1803. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MD/md
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Seema S. Rao 2/19/08
SEEMA S. RAO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600